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Authors

Pan, Lingling
McNamara, Gerry
Lee, Jennifer J
et al.

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RESEARCH ARTICLE

Give it to us straight (most of the time): Top managers' use of concrete language and its effect on investor reactions

Lingling Pan^{1,2} | Gerry McNamara² | Jennifer J. Lee² | Jerayr (John) Halebian³
| Cynthia E. Devers⁴

¹Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, Pennsylvania

²Department of Management, Broad College of Business, Michigan State University, East Lansing, Michigan

³Anderson Graduate School of Management, University of California, Riverside, Riverside, California

⁴Department of Management, Mays Business School, Texas A&M University, College Station, Texas

Correspondence

Gerry McNamara, Broad College of Business, Michigan State University, N475 North Business Complex, East Lansing, MI 48823.
Email: mcnamara@bus.msu.edu

Research Summary: Building on the communications and linguistics literatures, we explore the language attributes managers use in interactions with investors and the subsequent reactions of investors. Specifically, we hypothesize that top managers' use of concrete language attributes in communication with investors broadly associates with positive investor reactions. We further posit that this relationship will be moderated by the level of firm risk. Our results support our hypotheses and, thus, offer important insights to the impression management literature. First, subtle elements of managerial communication can have significant impression management consequences. More specifically, language concreteness is a key language attribute that generally induces positive investor responses. Finally, the effectiveness of language concreteness is conditional on the informational environment of the firm.

Managerial Summary: How can managers communicate in a way that presents the firm more positively or reduces the negativity associated with perceived firm risks? Our findings indicate that choosing appropriate persuasive language features in interactions with investors can help a firm manage its impressions. Specifically, we find that top managers' use of concrete language that provides details and specific information in communication with investors, in general, garners positive investor reactions. Further, the effectiveness of top managers' use of concrete language depends on investor concerns. More specifically, we find that when a firm is seen as having a riskier profile, using concrete language helps induce a more positive investor response; while when a firm is

seen as low risk, using abstract language may be more beneficial.

KEYWORDS

concrete language, firm risk, investor response, top managers' communication

1 | INTRODUCTION

Impression management (IM) research has provided useful insights regarding the tactics top managers use to influence external stakeholders' perceptions (Bolino, Kacmar, Turnley, & Gilstrap, 2008). Tactics examined in prior IM research include how managers: (a) Select news release media that positively represent the firm (Washburn & Bromiley, 2014); (b) Strategize timing of the release of confounding information, in order to reduce negative interpretations of a focal event (Graffin, Carpenter, & Boivie, 2011; Graffin, Haleblan, & Kiley, 2016), and, (c) Signal firm legitimacy by conforming to expected corporate conduct and governance structures (Westphal & Graebner, 2010; Westphal & Zajac, 1998). In addition, prior studies have explored when and how top managers use specific content to explain or justify firms' activities and qualities to avoid harm to their firms' images (Elsbach, 2003; Fiss & Zajac, 2006; Salancik & Meindl, 1984). Examples include internal-external attributions (Staw, McKechnie, & Puffer, 1983), obfuscation (Li, 2008), and discretionary disclosure strategies (Davidson, Jiraporn, Kim, & Nemec, 2004; Merkl-Davies & Brennan, 2007). Research findings show these tactics tend to assuage stakeholders' concerns.

Despite these rich insights, however, the IM literature has tended to focus on the *content* of messages, leaving the persuasive *language attributes* that may be embedded in top managers' communication fairly unexplored. Language attributes are reflected in the types and frequencies of words top managers employ, such as the inclusion of complex words or personal pronouns. A significant amount of prior work in the communications literature shows that language attributes are an effective tool for managing audiences' impressions because they influence the quality of message delivery (Bradac, Bowers, & Courtright, 1979; Larrimore, Jiang, Larrimore, Markowitz, & Gorski, 2011; Toma & D'Angelo, 2015). This literature suggests one form of language attributes—language concreteness—may be a particularly relevant IM tool for top managers who are attempting to offer a persuasive message to investors about their firm's performance, strategic plans, and future prospects. Concrete language refers to descriptive words that provide specific information and entail context-specific, detailed descriptions of situations (Hansen & Wänke, 2010; Langacker, 1987). In this study, we examine whether and under what conditions top managers' use of concrete language during earnings calls is associated with positive investor reactions.

Concrete language contains commonly used words to provide adequate details and context-specific information. Research has shown that the use of such language facilitates listeners' information processing and recall and enhances their confidence in speakers' decisions, thereby increasing their perceptions of speaker expertise. Consequently, concrete language enhances message persuasiveness, or the degree to which messages shape listeners' subsequent attitudes and behaviors (Hansen & Wänke, 2010; Larrimore et al., 2011; Miller, Lane, Deatrick, Young, & Potts, 2007; Toma & D'Angelo, 2015). Consistent with prior research, we expect that managers' use of concrete language increases the persuasiveness of their communication and, thus, generates positive investor reactions.

In terms of effectiveness, concrete language has also generally been shown to be more beneficial in settings in which the salience of downside risk is high (Larrimore et al., 2011; Toma & D'Angelo, 2015). Turning to the corporate setting, we focus on two risk factors that enhance the salience of such risk. Specifically, these factors are (a) missed earnings—a dynamic risk factor that raises concerns about the ability of the firm to weather a period of underperforming market expectations, and (b) risky financial profiles—a more stable risk factor that increases concerns that the firm may lack the ability to exploit market opportunities or withstand an unexpected market shock. When such conditions emerge, investors likely scrutinize the firm more carefully and require additional reassurance regarding the company and its leadership (Afifi & Weiner, 2004; Berger & Calabrese, 1975; Kramer, 1999). Accordingly, we expect that concrete language is especially beneficial in high downside risk situations since it enables speakers to provide adequate specificity to address investors' information needs, thereby reducing their uncertainty and increasing the probability they will evaluate the information more positively (Doest, Semin, & Sherman, 2002).

Earning calls are an ideal context to examine whether and how managers' use of concrete language influences investor reactions. Communicating with investors is an important aspect of corporate leadership (Pfeffer, 1981; Selznick, 1957). Due to information asymmetries, investors have incomplete access to firm information. These informational voids provide opportunities for top managers to communicate in ways that can influence investors' perceptions (Graffin et al., 2011; Porac, Wade, & Pollock, 1999). Corporate communication events, such as quarterly earnings calls, offer top managers a particularly salient opportunity to convince investors that their firms are well-positioned and capably managed. Further, because earnings calls are voluntary, managers have significant latitude to present information in the way they believe will best lead to positive investor reactions (Matsumoto, Pronk, & Roelofs, 2011).

Our study draws on the communications and linguistics literatures to examine top manager's use of concrete language during earnings call events and its influence on investors' responses. In doing so, our study offers two contributions. First, IM is inherently a communication process, and while organizational IM studies have been concerned with the *content* managers should include in their communication efforts (see review by Bolino et al., 2008), such as accounts, apologies, justifications, or excuses, this work has not yet expanded to include language attributes, which are a more elemental form of communication (Bozeman & Kacmar, 1997). We add to this literature by showing that specific language attributes embedded in managers' communication can influence investors' responses to earnings calls. Specifically, we demonstrate that managers can leverage language attributes to assuage investors' concerns and "minimize bad" outcomes (Bolino et al., 2008). This finding extends the IM literature by introducing a novel linguistic perspective that provides a deeper understanding of the influence of top managers' communication on a critically important organizational outcome. Second, we examine conditions in which concrete language is more or less beneficial in generating positive investor reactions. In particular, we focus on factors that influence the salience of downside firm risk and show that while concrete language generally induces positive responses, this effect is stronger under conditions of higher downside risk. Nevertheless, we also find that when firm downside risk is low, non-concrete (abstract) language may be a more beneficial IM tactic. In sum, our results show that the effectiveness of language attributes in leaving positive impressions on investors is contingent on firms' specific situations.

2 | THEORY AND HYPOTHESES

2.1 | Concrete language and investor reactions

Through research on the manner in which an actor can "create, maintain, protect, or otherwise alter an image held by target audience" (Bolino et al., 2008), IM scholars have implicitly devoted

significant attention to the *content* of the communication top managers deliver to target audiences (e.g., apologies, burying, excuses, justifications). Although this research has offered substantial insight into the IM approaches inherent in managerial messages, communications research suggests that the IM literature is missing a key element regarding how communication influences audience assessments. Communications scholars have highlighted that above and beyond content, the specific *language attributes* embedded in messages also influence audience perceptions and evaluations of speakers and their messages (Bradac et al., 1979; Miller et al., 2007; Pornpitakpan, 2004) and, thus, the persuasiveness of their communication (Eagly & Chaiken, 1998; Hovland, Janis, & Kelley, 1953; Wood, 2000).

Language attributes encompass almost every aspect of language including its sound system (phonology), rules and structure of sentences (syntax), and words (lexicon) (Bradac et al., 1979; Hosman, 2002). We focus our study on the attributes of the words used because they are the fundamental unit of language, and play an important role in whether or not audiences find speakers' overall messages persuasive (Berry, Pennebaker, Mueller, & Hiller, 1997; Semin, 2008). Words can be organized and arranged to form any higher-level unit of language units such as phrases, sentences, and paragraphs. Even when two messages contain very similar content, their effectiveness may vary based on the specific words used (Pennebaker & King, 1999). Such variation not only reveals important information about the communicator and the subject (Pennebaker, 1993; Pennebaker & Francis, 1996), but also affects the different inferences audiences make, which in turn influences both their evaluations of messages and subsequent responses (Berry et al., 1997; Parkinson, 1981; Sherblom & Reinsch, 1981).

Although prior communications and linguistics research has introduced a number of commonly observed language attributes associated with words, such as their diversity, intensity, and concreteness (Anderson & Blackburn, 2004; Bradac et al., 1979; Hosman, 2002; Miller et al., 2007), the IM literature has not yet examined the role these subtle language attributes play in managerial communication. Thus, to extend the IM literature, we draw on prior work on a critical language attribute that has been shown to influence the persuasiveness of a message: language concreteness. This language attribute has been shown to influence message persuasiveness, which in turn affects audiences' behaviors through cognitive mechanisms such as enhanced comprehension and message recall (Doest & Semin, 2005; Larrimore et al., 2011). Concrete language receives particularly favorable reactions when audience members have asymmetric information (less relative to speakers) and when uncertainty is present (Larrimore et al., 2011; Toma & D'Angelo, 2015). In the corporate context, the prevalence of information asymmetries causes investors to suffer from information deficiencies, which increase their uncertainty about the current performance and future prospects of the firms in which they invest. Accordingly, drawing from the communications and linguistics literatures, we explore how the level of concreteness in managers' language during earnings calls influences investors' subsequent responses.

Language concreteness reflects the degree to which the words used in a message provide details and contextualization of information. The linguistics literature has long established the significance of concrete language in human learning and information processing (Bleasdale, 1987; Paivio, 1963; Semin, 2008; Tse & Altarriba, 2009). Scholars have increasingly investigated its influence on persuasion, which has particular relevance to IM. Broadly, findings from this literature show that in most circumstances, messages with concrete language are more persuasive, as compared to messages that use abstract language (Hansen & Wänke, 2010; Larrimore et al., 2011; Toma & D'Angelo, 2015).¹ Prior research has suggested three reasons why concrete language increases the persuasiveness of communications (Doest et al., 2002). First, concrete language contributes to two

¹We should note that there are clear instances in which abstract language is well received. We elaborate on such contexts in our second set of hypotheses.

conditions that enhance message persuasiveness: audiences' sense of familiarity with the information and the ease with which they can understand the message (Baesler, 1997; Cacioppo & Petty, 1979; Schwanenflugel, Harnishfeger, & Stowe, 1988). Along these lines, concrete language requires the use of high frequency words and clear descriptions, which enable an audience's sense of familiarity when processing a message (Miller et al., 2007; Toma & D'Angelo, 2015). Moreover, research has shown that the contextualized and detailed explanation of the subject presented in concrete language is easy to process and understand (McClelland & Rumelhart, 1985). Thus, in general, concrete language invokes positive responses from audience members and encourages them to accept the messages that speakers deliver (Miller et al., 2007; Ratneshwar & Chaiken, 1991; Toma & D'Angelo, 2015).

Second, concrete language improves the accessibility of information to audience members, which is also conducive to message persuasiveness (Forgas, 2007; Marschark & Comoldi, 1991; Paivio, Yuille, & Madigan, 1968; Toma & D'Angelo, 2015; Wood, 1982). The persuasion literature suggests that messages have greater influence on audiences' evaluations and judgments when they are readily available and easily retrievable (Wood, 1982). The rich details and context-specific information provided by concrete language make messages both more interesting and memorable. Thus, in general, because messages composed of concrete language are promptly accessible, they have greater influence on listeners than less concrete messages, so they are more persuasive (Estes, 1982; Sadoski, 2001).

Third, generally, communicators who use concrete language are more persuasive and favorably evaluated because they are perceived as more competent and trustworthy, compared to those who use abstract language (Eagly & Chaiken, 1993; Larrimore et al., 2011; Toma & D'Angelo, 2015). Further, communicators are viewed as especially competent when their messages are clear and understandable (Miller et al., 2007; Toma & D'Angelo, 2015). Moreover, by providing details and showing proficient understanding of the subject, communicators are regarded as knowledgeable (Larrimore et al., 2011; Toma & Hancock, 2012). Messages delivered by competent and knowledgeable speakers generally are evaluated favorably, thus their communication tends to be persuasive (Hansen & Wänke, 2010; Miller et al., 2007; Toma & D'Angelo, 2015; Toma & Hancock, 2012).

The logic presented above is appropriate for our context of earnings conference calls, in which top managers communicate voluntarily with the investor community. In such settings, investors look to managers to reduce information asymmetry and assuage their concerns about firms' market positions and their leaders' capabilities (Cohen & Dean, 2005; Healy & Palepu, 2001). In the context of earnings calls, an example of a high concreteness statement that is more likely to reduce information asymmetry is: "Our gross profit increased 8% to \$20.2 million from \$18.7 million because we have launched five new products and opened 50 new stores nationwide". By contrast, an example of a statement low on concreteness that might not be as effective at reducing information asymmetry is: "We expect to do better this year because of actions we're taking to grow the firm." By providing situational details for current performance and future plans in an understandable manner, we expect the use of concrete language to be beneficial for investor responses, because doing so enhances the persuasiveness of the managers' statements and lessens the degree to which those investors perceive the need to further scrutinize the firm and its leadership.

By demonstrating their ability to clearly communicate specifics about a firm's performance and its operating environment, top managers who use concrete language enhance the confidence investors have in them, thus encouraging investors to assess the firm favorably. Therefore, we hypothesize that,

Hypothesis 1 (H1) *The level of language concreteness in top managers' communication is positively related to investor reactions.*

2.2 | Concrete language, abstract language, and risk conditions

We further argue that concrete language will be especially beneficial when downside risk is more salient. We base our logic on the following three arguments derived from the communications and linguistics literatures. First, concrete language will attenuate concerns about downside potential. As risk increases, individuals become more skeptical and uncertain (Cohen, Jaffray, & Said, 1987) and search for additional information to understand both the causes and potential consequences of the heightened risk and make predictions about future outcomes (Afifi & Weiner, 2004; Babrow, 2001; Berger & Calabrese, 1975; Kramer, 1999). Communications research suggests that when individuals feel heightened doubt or uncertainty, the descriptive explanations and specific details provided by concrete language can reduce their skepticism and questions (Doest et al., 2002). Therefore, in situations in which downside potential is salient, information that uses concrete language reduces pessimism and is favorably evaluated by the audience.

Second, the communications and linguistics literatures have shown that when individuals perceive a high level of downside risk, they typically experience cognitive stress, which invokes negative responses (Hastie & Dawes, 2001; Owayne & Rheenen, 1984; Rozin & Royzman, 2001; Wright, 1974). Concrete language is more effective than abstract language at reducing cognitive stress as it provides information that is easy to understand, extract, and process (Elsbach, 2004). These attributes are especially beneficial when trying to reduce the cognitive stress associated with high-risk situations. In addition, by providing information that is more specific and less ambiguous, concrete language mitigates the rise of additional uncertainty (Van Dijk & Zeelenberg, 2003). Thus, because concrete language is less cognitively demanding, audience members will feel less stress processing the information and making decisions. As a result, concrete language is more likely to evoke favorable responses than abstract language (Sadoski, 2001).

Finally, the communications and linguistics literatures have also shown that concrete language increases individuals' confidence when making decisions in uncertain contexts. For example, in a lending context, Larrimore et al. (2011) found that concrete language reduced uncertainty by providing specific information about sources. Specifically, when potential borrowers used concrete language in order to provide detailed information about themselves, lenders placed higher confidence in their own comprehension and evaluation of repayment likelihood and, thus, were more likely to invest. Therefore, when presented with information delivered with concrete language, audience members tend to experience enhanced confidence in their risk evaluations. Together this research suggests that concrete language bolsters audience members' confidence and, thereby, assuages their downside risk concerns. As a result, they perceive less downside threats and tend to evaluate those situations more favorably.

Although in general, concrete language is more beneficial than abstract (non-concrete) language in top managers' communications, instances exist in which abstract language is less likely to trigger a negative reaction and may actually be advantageous. For example, communications and linguistics research has shown that in favorable and low-risk situations, abstract language tends to generate positive audience assessments. Abstract language may lead to positive reactions in such situations for three reasons. First, the persuasive benefits associated with concrete language are less valued in positive situations because audience members perceive little need to be persuaded. Second, research on the inferences audience members draw from communications (Eagly & Chaiken, 1984; Eagly, Wood, & Chaiken, 1978) suggests when a current situation is favorable and involves limited risk, the use of abstract language leads listeners to infer the situation is stable and will remain consistent in the near future (Semin & Fiedler, 1988; Wigboldus, Semin, & Spears, 2000, 2006). Third, listeners make inferences about a speaker's attitude toward the subject of communication based on the language attributes s/he uses (Sperber & Wilson, 1995; Vonk, 1998, 2002). Prior studies suggest

that when a speaker uses abstract language, listeners presume the speaker holds a positive attitude toward the subject of discussion (Fox & Amichai-Hamburger, 2001; Pallak, Murrone, & Koch, 1983). Specifically, the use of abstract language suggests the speaker believes the current situation will persist. Thus, when they use abstract language, audiences infer speakers are certain and confident about the subject under discussion, reinforcing their view that potential risk associated with the situation is low and will remain low (Douglas & Sutton, 2006).

In our context, we focus on the effectiveness of concrete versus abstract language under two factors associated with firm risk—one more dynamic and the other more stable. We examine the two conditions because investors are likely to assess not only managers' communication about current episodic risks but also longer-term and more stable risks. To capture each type of risk, we examine situations when firms' quarterly earnings fail to meet expectations (i.e., large negative earnings surprises) and when they have risky financial profiles (i.e., high debt-to-equity ratio). A negative earnings surprise is a firm event that increases the salience of downside risk potential for investors. When investors' expectations are not met, they tend to immediately reduce the firm's valuation and question its long-term growth and profitability prospects (Barron, Byard, & Yu, 2008; Brown, 2001; Mikhail, Walther, & Willis, 2004). Thus, when a firm reports a negative earnings surprise, investors often focus on reasons the firm may continue to underperform expectations. The firm's financial risk profile also has an influence on the resources available to the firm and the degree of its debt obligations. When a firm incurs significant debt burdens and becomes highly leveraged, it becomes less flexible. As a result, the potential for future downside threats is enhanced, because the firm is viewed as both less able to exploit opportunities and more vulnerable to actions by rivals or external environmental shifts (Opler & Titman, 1994).

During earnings conference calls, concrete language allows top managers to explain and justify, in detail, their firms' performance, positioning, and challenges when the firms' downside risk is high. Moreover, concrete language may reduce investors' stress in processing information under uncertainty and boost their confidence when evaluating firms and making their investment decisions. Accordingly, we expect that concrete language elicits favorable evaluations toward top managers and their messages in the face of heightened downside risk. Therefore, we propose the value of concrete language for investors' responses will be greater in high downside risk situations.

In contrast, we propose that because abstract language will motivate listeners to conclude that the current situation is stable and persistent (Semin & Fiedler, 1988; Wigboldus et al., 2000, 2006), it may result in positive reactions in lower downside risk contexts. In addition, when managers use abstract language in low-risk situations, investors tend to infer those managers are confident and positive about their firm's strategic situation and future prospects. Therefore, abstract language is unlikely to trigger negative investor reactions in low-risk situations as it does in high-risk situations, and may even generate positive reactions under low firm risk.

Accordingly, we hypothesize that:

Hypothesis 2a (H2a) *The magnitude of the firm's earnings surprise will moderate the relationship between language concreteness in top managers' communication and investors' reactions, with concrete language triggering a more positive reaction when a firm has a large negative earnings surprise.*

Hypothesis 2b (H2b) *The level of the firm's financial risk will moderate the relationship between language concreteness in top managers' communication and investors' reactions, with concrete language triggering a more positive reaction when a firm has high financial risk.*

3 | METHODS

3.1 | Sample and data

We used quarterly earnings conference call transcripts to examine top managers' communication with investors. Since firms carefully prepare earnings conference call presentations before the announcement, transcripts of the presentations provide an unobtrusive measure of top managers' language use (Lee, 2015).

To test our hypotheses, we started with a sample of 500 randomly selected firms from Standard and Poor's (S&P) 1,500 in 2013. We collected quarterly earnings conference call transcripts from 2007 to 2013 from the Seeking Alpha website. The time frame includes both ups and downs of the economy, which allows us to examine top managers' language across diverse economic outlooks, increasing our data generalizability (Brunnermeier, 2009). We collected firm financial data from several sources including Institutional Brokers Estimate System (I/B/E/S), the Center for Research in Security Prices (CRSP), and COMPUSTAT. In addition, we collected abnormal returns data from the Eventus in Wharton Research Data Service (WRDS). Our final sample consisted of 388 firms, spread over 183 industries, which yielded 6,400 observations.

3.2 | Dependent variable

Following prior research in the finance and strategy literatures, we examine the impact of language on investors' assessment of firm value using an event study methodology (Kothari & Warner, 2007; MacKinlay, 1997). The importance of an event may be assessed by the security's price change during a period surrounding the event. This price change is called an abnormal return and is calculated as the difference between the observed return for a security and the predicted or normal return for the same security (Fama, 1991; McWilliams & Siegel, 1997). Thus, the impact of an event is measured by the portion of the return that is different than a firm's anticipated, normal returns. This may be expressed mathematically as follows:

$$e = R_{it} - (\alpha_i + \beta_i R_{mt}),$$

where R_{it} = return on stock i for day t ; R_{mt} = return on the market portfolio for day t ; α_i = constant; β_i = beta of stock i (measure of non-diversifiable risk).

To calculate parameters α and β , we followed prior research and used a 255 day estimation period that ends 46 days before the event date. This period reflects 1 year of trading data, which establishes a general pattern of the firm's stock price changes relative to the overall stock market. The value of " e " represents the difference between how the market reacts to the firm and how its history suggests the market would respond during the same period.²

A common approach in observing abnormal returns is to set the "window" as including both the event date (i.e., day 0) and 1 day after (i.e., day 1) (Flammer, 2013). This 2-day window approach captures the immediate investor reaction to the event. Our main analyses used this 2-day (0, 1) window to capture immediate investor reactions. We also examined 3-day (0, 2) and 4-day (0, 3)

²We should note that our estimation period includes four prior earnings call events. In line with convention in finance, accounting, and strategy research, we do not drop these earlier events from our estimation sample or adjust our beta estimates to account for prior events. We believe this is appropriate since including prior earnings events do not necessarily violate the CAPM or factor model assumptions. Also, announcement information allows the market to update its estimation of a firm's systematic risk exposure (beta). Thus, these prior events are important to include in the regression estimation of the firm's beta. Finally, these events represent a very small percentage of the observations in our estimation period (about 1.5%), they are unlikely to have a substantive effect on our results.

windows, and found consistent results. We did not assess stock market reaction prior to the earnings call because it is unlikely that such managerial communication language would “leak out” in advance.

3.3 | Independent variables

Our independent variable is the level of *concreteness* in the top managers’ language in earnings conference call presentations. Extant theory and empirical research about language concreteness from the linguistics literature, as well as psychology literature guides the development of our measure of language concreteness. According to this work, concrete language is characterized by the use of verbs, numbers, and past focused words, while abstract (non-concrete) language is characterized by adjectives, nonspecific quantifiers, and the use of future-focused words (Elliott, Rennekamp, & White, 2015; Semin & Fiedler, 1988; Sneffjella & Kuperman, 2015). First, research in the linguistics literature shows that verbs are considered more concrete than adjectives because verbs describe actions and behaviors that are typically observable and verifiable. In contrast, adjectives are generalized descriptions that summarize characteristics across multiple contexts and situations, thus are less dependent on contextual factors and are more abstract (non-concrete) (Semin et al., 2005; Semin & Fiedler, 1988). In line with this theory, a rich stream of research has found that listeners perceive the use of verbs as more concrete, and perceive the use of adjectives as more abstract terms for generalizing situations, objects, or behaviors (e.g., Assilaméhou, Lepastourel, & Testé, 2013; Maass, 1999; Rubini & Sigall, 2002). Thus, the linguistic literature supports the argument that verbs are more reflective of concrete language and adjectives are more reflective of abstract language.

Second, research suggests that quantitative numbers such as digits are more specific and concrete than nonspecific quantifiers such as “many” or “few” (Jerez-Fernandez, Angulo, & Oppenheimer, 2014; Zhang & Schwarz, 2012). In particular, in an accounting study of firms’ financial disclosures, Elliott et al. (2015) argued that specific numbers or digits represent concrete language. Further, Larrimore et al. (2011) argued that specific numbers are “concrete financial details.” (Larrimore et al., 2011, p. 24).

Finally, research has shown that listeners tend to assess past-focused language as concrete, because they associate such language to events that have already occurred. In contrast, future-focused language is speculative, involves conjecture, and cannot be factually vetted by listeners. Prior work shows individuals describe past events with richer and more specific sensorial detail and greater specificity regarding time and location than they describe future events (D’Argembeau & Van der Linden, 2004). Similarly, linguistic examinations of individuals’ social media posts indicate, “past experiences are represented in more detail (higher concreteness) than events that are listed in the future” (Sneffjella & Kuperman, 2015, p. 1455).

We offer two examples to illustrate language that is more and less concrete. A quote from a General Electric earnings call following an earnings miss was as follows: “We *had* \$77 million of after tax cost *resulting* from the termination of *two* supply arrangements [Italics added].” The language in this statement is highly concrete because of its use of past focused words, verbs, and specific numbers. By contrast, a quote from Abbot Laboratories’ earnings call after an earnings miss was as follows: “Abbott’s *high single-digit* top line growth, coupled with continued margin expansion *will deliver sustainable double-digit* ongoing EPS [Italics added].” The language in this statement is more abstract because it uses future-focused words, adjectives, and nonspecific quantifiers.

We derived the measure for concreteness through content analysis of quarterly earnings calls transcripts using LIWC 2015 (Linguistic Inquiry and Word Count) software. Content analysis has been widely used as an important tool to analyze textual data such as press releases, letters to

shareholders, media coverage, and interview transcripts. Many organization and strategy scholars have employed this methodology (e.g., Crilly, Hansen, & Zollo, 2016; Gamache, McNamara, Mannor, & Johnson, 2015; Love, Lim, & Bednar, 2017). LIWC is a word counting software with built-in dictionaries which have been demonstrated to be internally reliable and externally valid (Pennebaker, Booth, & Francis, 2007). First, LIWC seeks construct validity by grounding its design in psychometric theory. Each word category (e.g., verb, past focused) of its built-in dictionaries was generated by collecting a set of words based on theory and conceptual dimensions. Specifically, researchers used English dictionaries and psychological measures, such as emotion rating scales, to develop initial word lists. Then, independent judges used multi-step processes to assess content validity by examining two criteria: whether words are appropriately included in a category, and whether categories are discriminant from each other. All categories showed 93% or higher agreement among expert judges (Pennebaker et al., 2007). Second, researchers tested reliability by correlating people's self-reported responses to LIWC categories (Pennebaker & Francis, 1996). Depending on different computation methods, reliability alpha is between .55 (using a more conservative method) and .92 (using a method with potential overestimation). This test supports the internal consistency of LIWC dictionaries (Pennebaker et al., 2007). All categories of words are standardized as the "base rates of word usage," which is the ratio of counted words to total number of words in each sample of content (e.g., a transcript).

Communications and linguistics research suggests that listeners form a general view of language concreteness by looking at a combination of linguistic elements. Thus, we treat language concreteness as an aggregate (formative) measure. Specifically, we included six LIWC word categories for our concreteness measure: verbs, adjectives, numbers, nonspecific quantifiers, past-focused, and future-focused. We then normalized each lexical category score, summed the normalized scores of concreteness (i.e., verbs, numbers and past-focused words) and subtracted the normalized scores of abstractness (i.e., adjectives, nonspecific quantifiers, and future-focused words). Thus, we developed a continuous concreteness-abstractness measure, which has a normal distribution, with a mean of 0.09 and standard deviation of 2.63.³

3.3.1 | Validation of the concrete and abstract language measures

We conducted a validation study drawing on a sample of quotes from our earnings call database. We asked 20 current managers to assess the degree of concrete and abstract language used in earnings call quotes. We identified a sample top managers' quotes indicated by our content analysis as either high or low (about -2 and $+2$ standard deviations) on each of the dimensions (verbs – adjectives, numbers – quantifiers, and past – future) of our concreteness measure. We identified 10 quotes for each condition (high in verbs – adjectives, and low in verbs – adjectives, high in numbers – quantifiers, low in numbers – quantifiers, high in past – future, and low in past – future), resulting in 60 quotes, which we randomized in order of presentation. Respondents read a short definition of concrete and non-concrete language.⁴ Respondents then rated the concreteness of the quotes on a seven-point scale, with seven representing high concreteness and one representing low concreteness. Consistent with our expectations, respondents' assessments of concreteness were significantly higher for quotes our content analysis rated high rather than low on concreteness. Specifically, we found that for the numbers-quantifiers dimension, low concreteness quotes received an average rating of

³We did supplementary analyses excluding temporal orientation elements (past-focused words and future-focused words). Our results are completely consistent with those including temporal orientation elements in the measures.

⁴We provided the following definition to our respondents: Concrete language reflects the degree to which the words used can provide specific information or details and offer fairly clear and unambiguous meaning. In contrast, less concrete language uses words that are less specific and can have multiple interpretations.

2.81, while high concreteness quotes received an average rating of 6.00, validating this concreteness dimension ($p = .000$). We found a similar pattern for the other two dimensions of concreteness. For the past-future dimension, the high concreteness quotes received an average score of 4.78, while the low concreteness quotes received an average rating of 2.90 ($p = .000$). For verbs-adjectives, the high concreteness quotes received an average score of 4.25, while the low concreteness quotes received an average rating of 3.67 ($p = .000$). Taken together, these results provide strong evidence that the results of our content analysis used in our sample provide a valid measurement of language concreteness.⁵

3.4 | Moderators

To test the effect of top managers' concrete language on investors' responses under different levels of risk, we used two common measures to capture firm downside salience: negative earnings surprises (dynamic risk factor) and firms' financial risk profiles (stable risk factor). We used both a dynamic and a stable risk factor because investors are likely to interpret managers' language in light of both current and longer-term downside elements.

3.4.1 | Earnings surprise

A firm's earnings surprise is the unexpected deviation of the firm's performance from the consensus estimates of analysts (Skinner & Sloan, 2002). When the earnings surprise is negative, the negative deviation indicates that the firm fell short of expectations. This raises investors' concerns about whether the longer-term prospects for the firm are lower than previously expected. Thus, investors that perceive a negative earnings surprise might respond with negative future value assessment of their investment (Barron et al., 2008; Brown, 2001; Mikhail et al., 2004). In order to measure a quarterly earnings surprise, we obtained a firm's earnings surprise using standardized unexpected earnings (SUE) (Truong & Corrado, 2014). The quarterly SUE measure is defined as the difference between actual earnings and expected earnings, scaled by the end of quarter stock price. We measured the consensus expected estimates of earnings as the median of all analysts' forecasts in the 90-day period prior to the earnings announcement.⁶

3.4.2 | Financial risk profile

We measured each firm's financial risk profile using the firm's debt-to-equity ratio. High debt-to-equity ratios raise downside risk concerns for two reasons. First, when firms are highly leveraged (have a high debt-to-equity ratio), they have limited access to debt markets to fund strategic investments. Second, highly leveraged firms must commit a large percentage of their cash flows to paying off debts. As a result, high debt-to-equity ratios reduce firms' abilities to generate additional resources to invest in new opportunities or respond to competitive challenges. This raises the

⁵In addition to this test, we conducted an additional analysis to confirm our choice of using an aggregate measure of concreteness, rather than any of the individual dimensions. The literature has argued that aggregate measures should explain variance "equal to or greater than what is explained by their individual indicators" (Johnson, Rosen, Chang, Djurdjevic, & Taing, 2012: 68). In line with this condition, we find that a model that includes our composite concrete language variable explains greater variance in our dependent variable than a model with any one of the individual measures. More specifically, compared to the composite measure, the verbs-adjectives variable explained 11% less variance of the dependent variable, the numbers-quantifiers variable explained 15% less variance, and the past-future variable explained 20% less variance. This suggests that the composite measure is adding additional explanatory value above any of the individual elements.

⁶Since investors' reactions are likely to be heavily influenced by the firm's current financial performance relative to their expectations, we want to be sure to partial out the effect of earnings' surprises when assessing the importance of managers' language attributes. Thus, we note that the inclusion of earnings surprise as a hypothesized moderator variable also allows it to serve as a control variable when examining the effect of language concreteness.

potential those firms will fall behind competitors who have the financial flexibility to both respond to opportunities and defend against threats. At extreme levels of leverage, firms will face higher bankruptcy risk, which is a significant downside risk for shareholders since they are residual claimants to the firms' assets (Merton, 1974).

3.5 | Control variables

We controlled for additional factors that could influence our dependent variable, including variables relating to the content of managers' communication, firm-level variables, and industry-level variables. First, we controlled for three variables to account for the effects of communication content on investors' reactions. Prior studies in finance and accounting suggest that positive and negative communication content in financial disclosures influences investors' evaluations and reactions (e.g., Davis, Piger, & Sedor, 2012; Feldman, Govindara, Livnat, & Segal, 2010). Accordingly, we included positive and negative words, as well as words reflecting a firm's success to capture positive and negative content in the earnings call transcripts. To capture these, we used LIWC dictionaries for positive affect, negative affect, and reward.⁷ Second, we controlled for two firm level factors that might impact either managers' language or investors' responses. We controlled for firm size and firm performance because they can affect a firm's ability to influence investors' reactions to firm events and firm communication (Hendricks, Singhal, & Zhang, 2009). Firm size was operationalized as the logarithm of the value of the firm's total assets. Additionally, we controlled for return on assets to account for firm performance conditions. Third, to control for variations regarding language use across industries, we included 2-digit SIC level industry dummies in our analyses.

4 | ANALYSIS AND RESULTS

We standardized all predictors and moderating variables other than language concreteness, which as mentioned earlier is a sum of standardized measures. We used a Generalized Estimating Equation model in order to control for unobserved firm heterogeneity in our longitudinal data (Ballinger, 2004; Liang & Zeger, 1986). GEE is an extension of the generalized linear model and has several advantages (Hardin & Hilbe, 2003; Stillman, 2003). First, GEE allows us to produce unbiased estimates for longitudinal data, because the model is robust to conditions in which the assumption that unobserved firm specific effects are independent of other predictors is violated (Ballinger, 2004; Krause, Filatotchev, & Bruton, 2015). Second, by specifying the covariance matrix and link functions, the GEE model produces a beta coefficient that is flexible and robust to error (McDonald, 1993; Zeger, Liang, & Albert, 1988). As a result, GEE model is widely used to analyze panel data (Hallen & Pahnke, 2016; Henderson, Miller, & Hambrick, 2006; Quigley & Hambrick, 2012).

We specified our GEE model with Gaussian distribution because our dependent variable (CARs) is continuous and normally distributed. We specified the *identity* function as the link function because we estimated a linear relationship with the untransformed dependent variable. We specified an *exchangeable* correlation matrix because we assumed that any two observations within the same firm are correlated, but the correlation is constant regardless of the temporal distance between the

⁷In addition to these variables, we also tested language certainty, language tentativeness, and risk-oriented language as potential additional controls. None of these variables had a substantive effect in any model, nor did they influence the effects of our hypothesized variables. Thus, for the sake of model parsimony, we did not include these variables in our final analyses.

TABLE 1 Descriptive statistics

Variables	Mean	s.d.	1	2	3	4	5	6	7	8
1 Cumulative abnormal returns	0.24	7.39								
2 Language concreteness	0.09	2.63	0.02							
3 Earnings surprise	-0.04	0.35	0.10	-0.03						
4 Financial risk profile	0.91	9.22	0.02	0.02	-0.07					
5 Firm size ^a	8.47	1.69	-0.03	0.00	-0.02	0.05				
6 Return on assets	0.05	0.88	-0.01	-0.02	-0.01	-0.01	-0.02			
7 Positive content	3.17	0.66	0.06	-0.23	0.08	0.02	0.14	-0.05		
8 Negative content	0.66	0.32	-0.05	0.04	-0.11	0.00	0.09	-0.04	-0.04	
9 Success	0.02	0.00	0.05	0.00	-0.01	0.00	0.04	-0.01	0.19	-0.03

Note. $N = 6,400$.

^a We used natural log of total assets.

observations (Kincaid, 2005). As a robustness check, we also tested our hypotheses using a random effects model and found consistent results.

Table 1 presents the descriptive statistics and correlations for variables included in our models. Table 2 reports the GEE model results. Model 1 is the baseline model with controls only. Model 2 tests the main effect of language concreteness. Model 3 and model 4 each tests the interactions of language concreteness with negative earnings surprise and firm financial risk profile, respectively. Model 5 adds the hypothesized interactions. Model 6 includes a three-way interaction of language concreteness, earnings surprises, and firm financial risk profiles.

Hypothesis 1 predicted that top managers' use of concrete language in earnings conference calls is positively associated with investors' reactions. As reported by Model 6 in Table 2, concrete language is positively associated with investors' reactions ($b = 0.130$, $p = .001$), supporting hypothesis 1. Going from a low level of concrete language (-2 SD) to a high level of concrete language ($+2$ SD) would result in a return change of about 1.36%. In our sample, firms have an average market value of just over \$13 B, implying that if a firm uses concrete language ($+2$ SD), it will generate, on average, a \$178 M more favorable market reaction than if it had used abstract language (-2 SD).

Hypothesis 2a predicted that top managers' use of concrete language will be negatively moderated by the firm's earnings surprise, with a stronger effect when firms have large negative earnings surprises. Shown by Model 6 in Table 2, concrete language and earnings surprises had a negative interaction effect ($b = -0.072$, $p = .020$). As we expected, investors reacted more positively to concrete language when firms faced greater negative earnings surprises but more positively to abstract language when the firms met their earnings expectations. We further confirmed this result by plotting the interaction (Figure 1). We find a strong positive effect for concrete language when firms have large negative earnings surprises. However, such benefits of concrete language erode as the level of risk decreases. Thus, Hypotheses 2a received support. For firms experiencing a negative earnings surprise (-1 SD), this finding translates to a CAR increase of 2.10% or about a \$274 M improvement in market value when firm managers use concrete language ($+2$ SD) as opposed to abstract language (-2 SD). For firms that exceeded earnings expectations ($+1$ SD), the relationship weakens and the use of concrete language results in only a \$79 M improvement in market value, or a 0.60% increase in CARs.

Similarly, for Hypothesis 2b, we posited that the market reaction associated with the level of concreteness in top managers' communication will be contingent on the firm's financial risk profile. Model 6 shows that the interaction effect between concrete language and financial risk profile is

TABLE 2 GEE model results

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	−0.627 (.722)	−1.678 (.340)	−1.655 (.344)	−1.676 (.343)	−1.660 (.346)	−1.667 (.347)
Firm size	−0.152 (.025)	−0.139 (.037)	−0.140 (.035)	−0.143 (.034)	−0.143 (.033)	−0.146 (.030)
Return on assets	−1.648 (.127)	−1.429 (.182)	−1.403 (.189)	−1.403 (.190)	−1.386 (.195)	−1.330 (.215)
Positive content	0.595 (.000)	0.638 (.000)	0.639 (.000)	0.639 (.000)	0.639 (.000)	0.655 (.000)
Negative content	−1.069 (.001)	−0.763 (.017)	−0.784 (.014)	−0.739 (.021)	−0.756 (.018)	−0.799 (.012)
Success	0.252 (.010)	0.259 (.008)	0.258 (.008)	0.268 (.006)	0.267 (.006)	0.266 (.006)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Language concreteness		0.121 (.001)	0.123 (.001)	0.124 (.001)	0.124 (.001)	0.130 (.001)
Earnings surprise		0.653 (.000)	0.678 (.000)	0.685 (.000)	0.700 (.000)	0.676 (.000)
Financial risk profile		0.146 (.105)	0.131 (.148)	0.044 (.643)	0.041 (.666)	0.061 (.520)
Language concreteness × Earnings surprise			−0.074 (.014)		−0.052 (.063)	−0.072 (.020)
Language concreteness × Financial risk profile				0.157 (.000)	0.145 (.001)	0.201 (.000)
Language concreteness × Earnings surprise × Financial risk profile						0.071 (.002)
Wald Chi Square	142.57	205.76	211.38	218.73	221.67	231.81

Note: $N = 6,400$. p -values in parentheses, two-tailed tests for control variables and one-tailed tests for hypothesized variables.

positive ($b = 0.201$, $p = .000$). As shown in our interaction plot (Figure 2), shareholders react more positively to concrete language when firms have higher financial risk profiles, but more positively to abstract language when firms' financial risk is low. As such, Hypothesis 2b is strongly supported. For firms whose financial risk profile is high (+1 SD), this finding translates to a CAR increase of 3.40%, or \$449 M increase in market value when top managers use concrete language (+2 SD) as opposed to abstract language (−2 SD). In contrast, for firms with low financial risk profiles (−1 SD), the use of abstract as opposed to concrete language leads to a 0.73% increase in CAR, or \$95 M increase in market value. These estimates indicate increased benefits associated with using concrete language when the firm has higher financial risk but also evidence that abstract language can be beneficial when firm financial risk is low.

4.1 | Supplementary analyses

4.1.1 | An alternative, narrower measure of concreteness

To ensure that our results on concreteness were not solely driven by a managerial focus on past events, we re-analyzed our transcript data using a concreteness measure that excluded temporal

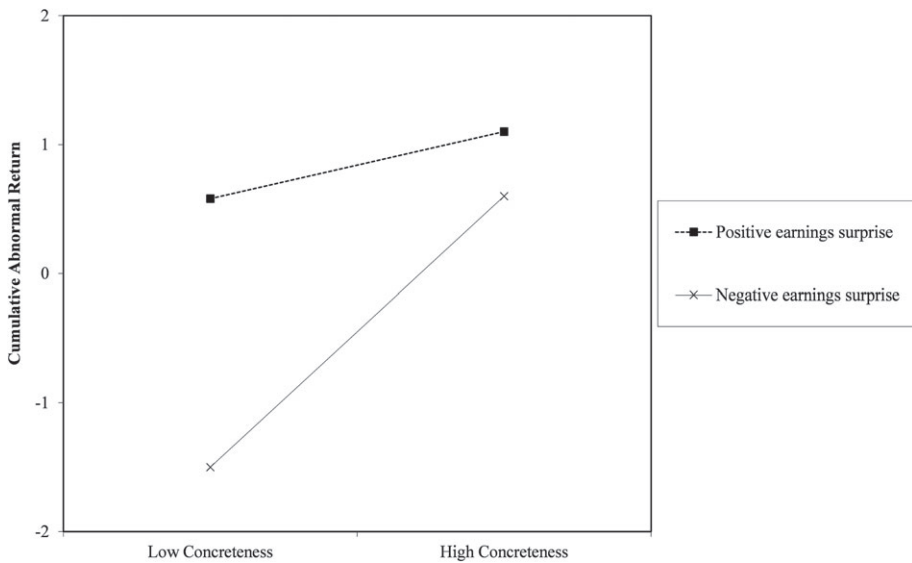


FIGURE 1 Concreteness × Earnings surprise

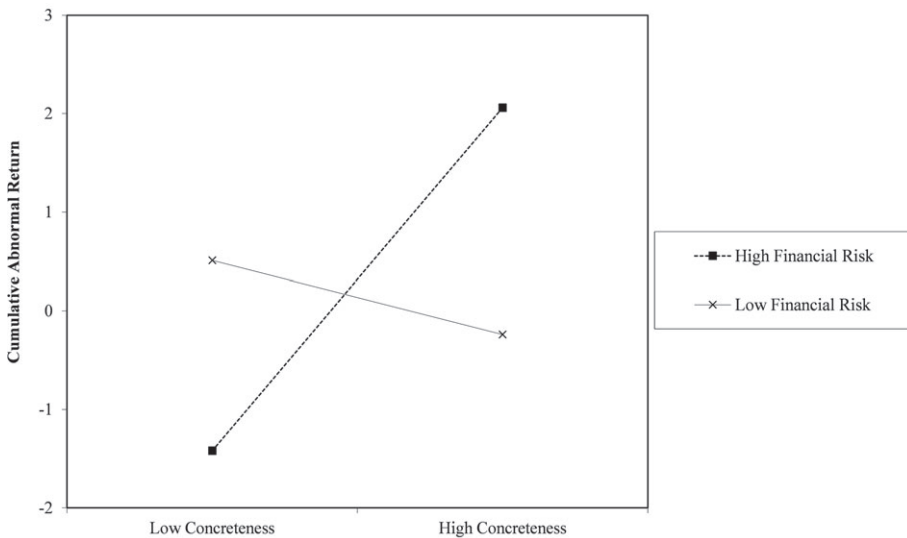


FIGURE 2 Concreteness × Financial risk profile

orientation elements (i.e., past focus and future focus). With this analysis, we found results essentially consistent with those presented in our primary analysis.⁸

⁸Relatedly, there may be some concern that the performance of the firm may influence the temporal orientation of managers' language. However, we find no evidence that negative earnings lead to a greater focus on the past and less on the future. The correlation between earnings surprise and past focus is only -0.028 , and the correlation between earnings surprise and future focus is -0.005 . Neither of those correlations is high enough to suggest that earnings surprise is related to the temporal focus of top managers' language. Thus, the data suggests that performance relative to expectations does not influence the temporal focus of managers' communications.

4.1.2 | A test of a three-way interaction

We argued earlier that abstract language is likely to be of more value when perceived risk is low. We tested this with 2-way interactions between each of our risk measures and language concreteness. To look further into this issue, we also included a 3-way interaction between language concreteness, earnings surprise, and firm financial risk. With this test (reported in Model 6 of Table 2), we find a strong three-way interaction effect. Specifically, when both earnings surprise and firm financial risk indicate low risk for the firm, the investors responded more favorably to abstract compared to concrete language ($b = 0.071$, $p = .002$). This offers additional support for our general argument that abstract language can be beneficial in highly favorable situations.

5 | DISCUSSION

The extant literature provides evidence that impression management efforts help create positive firm images, and prevent and reverse negative firm images. We add to this body of research by examining the use of persuasive linguistic attributes in top managers' public communication as a form of impression management. Building on the communications and linguistics literatures, we explored whether managers' use of language attributes in firm communications positively influence investor reactions. We proposed and found that in the general case, top managers' use of concrete language during earnings calls triggers positive investor reactions. In addition, our results further revealed that concrete language is especially beneficial when the firm faces high downside risk. Hence, our results demonstrate that using concrete language is an effective persuasion strategy when top managers are confronted with salient negative information. In addition, however, our findings also provide some evidence that when downside risk is less salient, abstract (non-concrete) language, rather than concrete language is associated with more positive investor reactions. We now turn to the theoretical and practical implications of our findings.

We broadly add to the impression management literature by demonstrating that it is not just the content of communication that holds potential in effectively managing the impressions of audiences. We find that subtle language cues embedded in the linguistic style of managers also have an impact on audience members' responses. Specifically, we develop and test theory about an important persuasive language attribute, language concreteness embedded in top managers' communication. Concrete language constitutes a distinct form of linguistic strategy that can induce audiences' positive reactions by providing details and context-specific information. The communications literature shows that this approach increases listeners' ease of processing, minimizes cognitive burden and stress, and enhances perceptions of speakers' persuasiveness (Hansen & Wänke, 2010; Larrimore et al., 2011; Miller et al., 2007). Consistent with this prior work, we found that managers' use of concrete language in earnings calls enhances investors' subsequent reactions. Our findings are novel as they reveal that managers' use of subtle language attributes embedded in corporate communications can meaningfully impact how audience members' respond to those messages.

Although we focused our examination on language attributes in earnings calls, the use of concrete language by CEOs likely matters in various other management contexts. Our results suggest the benefits of concrete language are particularly important in situations in which negative information is salient and uncertainty heightened. Prior communications work shows the use of concrete language builds confidence in speaker expertise and trustworthiness (Larrimore et al., 2011; Miller et al., 2007). Conversely, the use of abstract language may be beneficial in situations in which managerial expertise and trust are established. Thus, future research should examine interactions top

managers have with a range of stakeholders under varying conditions to examine whether the value of abstract vs. concrete language differs across these settings. For example, future research could examine the influence of language in the boardroom. In firms with longstanding CEOs and stable board membership, directors may have confidence in the expertise and trustworthiness of the CEO. Under such situations, CEOs may benefit by adapting the language attributes they use to reflect the higher credibility they have with those board members. However, the relationship may change in situations where the CEO is new and is a firm outsider, or when there has been significant change in board membership. Additionally, in interactions with investors, the benefits of concrete and abstract language may differ based on firm characteristics that influence the uncertainty of firm assessments, such as whether the firm is established or new and unproven, or if the market is facing a technological or market discontinuity. Overall, our findings suggest the effectiveness of language concreteness is complex and conditional on the informational environment of the firm. Further work should more carefully explore the contingencies that drive language attribute effectiveness.

Our research raises other interesting questions about the influence of language attributes. One potential extension of our findings is to examine the influence of linguistic attributes in conjunction with previously discussed impression management categories. For instance, prior work has been conducted on: (a) apologies—in which speakers accept responsibility for negative events, (b) excuses—in which speakers deny responsibility for negative behavior or outcomes, and (c) justifications—in which speakers accept responsibility for negative outcomes but not their negative implications (Bolino et al., 2008). Given the effectiveness of concreteness under more negative conditions, we would expect that managers would receive better responses in using concreteness under conditions in which managers' attempt to "minimize bad" through apologies, excuses, and justifications (e.g., Bolino et al., 2008). However, it is unclear whether the value of using concrete language differs across these three forms of impression management content techniques. Thus, results from this study suggest a complementary approach for future research in which both the content of communication and language attributes embedded in communication are jointly considered to yield a more nuanced understanding of language as a means to manage impressions.

The current study constitutes an initial step in examining the impression management implications of language attributes in top managers' communication. Another interesting set of questions triggered by this study concern the processes by which language attributes are selected or emerge. While results from this study show that concrete language is typically beneficial, we do not know to what degree this language is intentional. Do some CEOs better understand the association between language attributes and market reactions? If so, how is this understanding developed? Hence, while we examined the consequences of using language attributes, we do not yet understand the conditions under which or the reasons why CEOs use specific language attributes. Thus, while our work showed consequences associated with the use of language attributes, future work may benefit from an exploration of language attribute antecedents.

Communications and linguistics theory should stimulate further work on impression management. This literature allowed us to discover the important, yet unexplored influence of language attributes. Further exploration of the communications and linguistics literature suggests other language influences that may influence impression management practices and outcomes. We previously discussed the general communication areas of phonology, syntax, and lexicon, and each area likely provides fertile ground for subsequent work, as CEOs may use the sound of words, word order, and word choice for more effective communication. Although we clearly encourage work in these areas, research in the communications literature points to an additional previously unmentioned area that might enhance our understanding of impression management effectiveness: language imagery (Emrich, Brower, Feldman, & Garland, 2001; Taylor & Thompson, 1982). Language imagery

consists of objects, actions, and ideas that are represented to appeal to the physical senses of the listener. For example, effective speakers frequently use sense of smell, sight, taste, touch, or hearing in their imagery, often with simile or metaphor. Thus, the communications and linguistics literatures hint at multiple avenues by which to further explore impression management in communications.

Finally, this study has implications for managers. By delving into a particular persuasive language attribute, our study suggests that top managers should be conscious of the influence of language and be mindful when designing their linguistic strategy for managing investor impressions because, while the benefits of concrete language appear broad, outcomes still depend on levels of firm risk. Thus, it makes financial sense for managers to consult with their public relations professionals in order to best manage stakeholders' impressions in high-risk or other negative situations through the intentional use of language attributes. Under such negative conditions, firms truly appear to benefit most when their CEOs "tell it to us straight."

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